ARISE - C-130 Hercules 09/11/14 Science Report

Aircraft:
C-130H Hercules #439 (See full schedule)
Date:
Thursday, September 11, 2014
Mission:
ARISE
Mission Location:
Arctic Ocean
Mission Summary:

CERES Gridbox - Flt #7

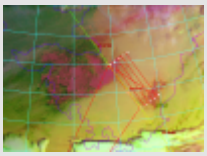
The C-130 flew a high altitude (22kft) radiation mapping mission over a period of about 2-hours that coincided with several CERES satellite overpasses, CloudSat and CALISPO. A flat, descending profile to low-altitude and a brief survey of the radiative and microphysical properties of low clouds, followed this. During the flight, there was a gradient in the low cloud conditions from the southeastern end of the gridbox to the northwestern end. At the southeastern end, the low clouds were more solid. At the northwestern end, the low clouds mostly cleared out. In between, the low clouds appeared more broken. Scattered cirrus clouds were also present in the area and were observed above the aircraft at times. Later in the flight when the low clouds were surveyed, the tops were found to range from only 600-900 ft.

The flight scientist today was Anthony Bucholtz (NRL). An excerpt from his flight notes: *?All in all this was another good flight day for CERES validation. The boxed area had somewhat bi-modal low cloud conditions (mostly low cloud in the SE part, and clear in the NE part) and there was cirrus in various parts of the box that may complicate the analysis. But the surface ice conditions looked fairly consistent throughout the box (compact, broken ice). And while we had to cut our low level runs short, and we were not able to get below the low clouds, we were able to get two profiles in the box and get some in cloud legs for the probes and just above cloud legs for radiation.?*

All of the instrumentation was reported to work well for the majority of the flight.

Images:

September 11, 2014 Figure 1



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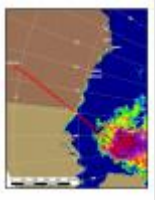
September 11, 2014 Figure 2



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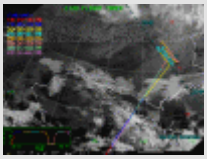
September 11, 2014 Figure 3



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September 11, 2014 Figure 4

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September 11, 2014 Figure 5

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Submitted by:
William L. Smith Jr. on 09/13/14
Related Flight Report:

C-130 Hercules 09/11/14 - 09/12/14

Flight Number:
CERES Gridbox - Flight #7
Payload Configuration:
ARISE
Nav Data Collected:
Yes
Total Flight Time:
7.5 hours
Submitted by:
Martin Nowicki on 09/12/14
Flight Segments:

From:	PAEI	**To:**	PAEI
Start:	09/11/14 18:35 Z	**Finish:**	09/12/14 02:05 Z
Flight Time:	7.5 hours		
Log Number:	141002	**PI:**	Christy Hansen
Funding Source:	Bruce Tagg - NASA - SMD - ESD Airborne Science Program		
Purpose of Flight:	Science		

Flight Hour Summary:

	141002	151004
Flight Hours Approved in SOFRS	229	
Flight Hours Previously Approved		88.7
Total Used	140.3	18.2
Total Remaining		70.5

151004 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining
10/02/14 - 10/03/14	Cal Flight	Science	8.6	8.6	80.1
10/04/14	Transit	Transit	9.6	18.2	70.5

Source URL: https://airbornescience.nasa.gov/science_reports/ARISE_-_C-130_Hercules_09_11_14_Science_Report

Page Last Updated: April 22, 2017

Page Editor: Erin Justice

NASA Official: Bruce A. Tagg

Flight Reports began being entered into this system as of 2012 flights. If there were flights flown under an earlier log number the flight reports are not available online.

141002 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining
08/24/14	Engineering Check Flight	Check	2.8	2.8	226.2
08/29/14	Boom Calibration Flight	Check	0.5	3.3	225.7
08/30/14	Project Check Flight	Check	5.2	8.5	220.5
09/01/14	Transit (1 of 2)	Transit	8.7	17.2	211.8
09/02/14	Transit (2 of 2)	Transit	6.6	23.8	205.2
09/04/14 - 09/05/14	Arctic Ocean - Flight #1	Science	6.6	30.4	198.6
09/05/14 - 09/06/14	140W Sea Ice - Flight #2	Science	7.1	37.5	191.5
09/06/14 - 09/07/14	Ice ZigZag-Terra - Flight #3	Science	7.1	44.6	184.4
09/07/14 - 09/08/14	CERES Gridbox - Flight #4	Science	8.4	53	176
09/09/14 - 09/10/14	CERES Gridbox - Flight #5	Science	7.7	60.7	168.3
09/10/14 - 09/11/14	MIZ Lawnmower - Flight #6	Science	8.8	69.5	159.5
09/11/14 - 09/12/14	CERES Gridbox - Flight #7	Science	7.5	77	152
09/13/14 - 09/14/14	CERES Gridbox - Flight #8	Science	8.3	85.3	143.7
09/15/14 - 09/16/14	CERES Gridbox - Flight #9	Science	8.1	93.4	135.6

09/16/14 - 09/17/14	Radiation Wall Pattern - Flight #10	Science	8.3	101.7	127.3
09/17/14 - 09/18/14	CERES Gridbox - Flight #11	Science	7.2	108.9	120.1
09/18/14 - 09/19/14	Sea Ice Albedo/CryoSat - Flight #12	Science	8.6	117.5	111.5
09/19/14 - 09/20/14	Radiation Wall Pattern - Flight #13	Science	8.3	125.8	103.2
09/21/14 - 09/22/14	Sea Ice & Radiation - Flight #14	Science	8.2	134	95
09/24/14 - 09/25/14	Gridbox TOA+Surface - Flight #15	Science	6.3	140.3	88.7